T H E U N I V E R S I T Y O F A L B E R T A

RELEASE FORM

NAME OF AUTHOR ....Michael D. Harvey.....

TITLE OF THESIS ....Ability, Effort, and the Deserved.....

....Reward as Perceived by Actors and.....

....Observers.....

DEGREE FOR WHICH THESIS WAS PRESENTED .Master of Arts.....

YEAR THIS DEGREE GRANTED ..1977.....

THE UNIVERSITY OF ALBERTA

ABILITY, EFFORT, AND THE DESERVED REWARD AS PERCEIVED BY ACTORS AND OBSERVERS

by

© MICHAEL D. HARVEY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT OF PSYCHOLOGY

EDMONTON, ALBERTA

FALL 1977

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Ability, effort, and the deserved reward as perceived by actors and observers" submitted by Michael D. Harvey in partial fulfilment of the requirements for the degree of Master of Arts.

ABSTRACT

Ability and effort have been described as inputs in equity research and as perceived causes for success and failure in the achievement literature. The present research was designed to investigate the relative importance of these two variables for actors and observers given the task of rewarding an actor for his performance. Based upon Jones and Nisbett's (1972) discussion it was predicted that actors would emphasize ability when self-rewarding, while observers would emphasize effort when rewarding the actor for his task performance. A study was conducted that manipulated two levels of ability (high and low), two levels of effort (high and low), and three perspective conditions (actor, observer, and co-actor). Results showed that observers and co-actors rewarded the actor on the basis of effort and not ability, while actors did not self-reward on the basis of either variable. Rather, actors cited performance most often as their basis for reward. Other data showed that actors felt better following high ability feedback rather than low ability feedback, while observers believed that the actor felt better following both high ability and high effort feedback. Results are discussed in terms of actor-observer differences, the achievement literature (e.g. Weiner & Kukla, 1970), and moral evaluation (e.g. Kelley, 1971).

ACKNOWLEDGMENTS

Many thanks to Michael Enzle, to whom this work is dedicated, for teaching me in the art of extracting good data from undergraduates. Its practice is not unlike alchemy in its various forms, though hopefully more effective.

My thanks are also extended to Dr. Brendan Rule for her helpful suggestions throughout the course of this project, and to Dr. W.A. Harrell for serving on the examining committee.

I should also like to thank Merrilyn Greig for her excellent typing of the manuscript.

And finally, a special and personal thank-you to my wife, Kathleen. Not only has she encouraged me to continue my studies over the past four years, but she also firmly believes that I will attain the next rung on the academic ladder. I am very grateful for her belief.

****

This research was supported in part by a Canada Council Doctoral Fellowship to the author.

TABLE OF CONTENTS

LIST OF TABLES

Introduction

Within the social psychological literature concerned with equity theory (Adams, 1965; Walster, Berscheid, & Walster, 1973), attributions for achievement behavior (Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971), and rewarding behaviors (Weiner & Kukla, 1970; Lanzetta & Hannah, 1969) the target person's level of ability and effort expenditure are variables of interest. Ability and effort serve as inputs (equity theory), as perceived causes for successful performances (achievement attributions), and as criteria for reward distribution. However, the relative contributions of these two variables within any of these research areas have not been adequately documented. The purpose of the present research was to investigate the relative contributions of ability and effort as criteria for actors and observers in the dispensing of rewards.

Equity theory (Adams, 1965) centers around the proposition that the distribution of outcomes should directly correspond to the relative sizes of the inputs of the persons concerned, and that persons are motivated to alter their inputs or outcomes in situations in which this relationship does not obtain. Inequity distress (Walster et al., 1973; Austin & Walster, 1974), which is generated once a situation is perceived to be inequitable, is postulated to be the motivating force for the restoration of equity, and can be described as a feeling of unfairness or injustice (Austin, 1976). Such distress has been experienced by both the disadvantaged party and the advantaged party in an inequitable exchange situation (Austin & Walster, 1974), implying that the most psychologically satisfying outcome is that which is deserved,

fair, and just. Assuming such satisfaction to be the desired end state for all parties concerned, two corollaries follow: (a) A person will reward himself only on those outcomes which he believes he deserves, and (b) a person will reward another only those outcomes which he believes the other person deserves. If equity concerns are relevant, then regardless of perspective actors and observers will strive to be fair and equitable when rewarding themselves or others for some behavior.

Adams (1965) describes a person's possible inputs to a task as being "...education, intelligence, experience, training, skill, seniority, age, sex, ethnic background, social status, and, of course, the effort he expended on the job" (pp.276-277). These inputs can be grouped into three classes: The first five inputs consist of personal inputs that are relatively stable over the short term (an ability class; see Weiner et al., 1971), the second five consist of inputs endowed upon the person by virtue of his relationship to his social setting (a social input class), and the last input, effort expended, alone defines a class consisting of a highly variable personal input (Weiner et al., 1971). Weiner (1974; Weiner, et al., 1971) has identified four critical variables to which causal ascriptions are made in task situations--ability, effort, task difficulty, and luck. These variables have been characterized as occupying a two-dimensional space wherein ability is internal and stable, effort is internal and unstable, task difficulty is external and stable, and luck is external and unstable. Of these variables, ability and effort have been of primary concern for achievement attribution research, and some research (e.g., Weiner & Kukla, 1970) has manipulated ability and effort information and has had observers respond with rewards or punishments for the stimulus persons. For both equity research and

achievement attribution research, then, ability and effort are considered to be major criteria for dispensing rewards.

Adams (1965) and Walster et al. (1973) suggest in passing that different parties to an exchange may have different perceptions of the worth of one party's inputs, but they fail to elaborate upon the form that these differences might take. In addition, Weiner et al. (1971) suggest that a student and professor may perceive different causes for the student's success or failure, and so estimate divergent probabilities for subsequent success. Thus, while these authors suggest perspective differences, they do not specify how actors and observers might differentially weight ability and effort information. The present research was designed with a view toward a better understanding of how actors and observers weight ability and effort information about the actor when rewarding the actor for his performance. While no theoretical statement in the literature and no coherent body of research addresses this question, there do exist several studies which, when considered together, are suggestive of specific perspective differences. A sample of these studies is reviewed, first with reference to the weightings made by actors, and then with reference to the weightings made by observers.

The early research which tested the basic propositions of equity theory (e.g., Adams & Jacobsen, 1964; Adams & Rosenbaum, 1962; Andrews, 1967) focussed almost exclusively upon the person as an actor. Subjects in these experiments were led to believe that they were being inequitably paid, and their subsequent performance was measured. A very common manipulation was to compare the actor's qualifications with those of a qualified reference group during an initial interview, and the actor

was told that he either met or failed to meet these qualifications. Since all were offered the same rate of payment, those who were made to feel unqualified were overpaid, and thus experienced inequity. Subjects who failed to meet the qualifications were made to feel inexperienced, inept, stupid, and unable to ask simple questions; in short they were given low ability information about themselves. The results from this line of research showed that actors are very responsive to this ability manipulation, since low ability actors consistently produced more for the experimenter in order to earn the overpayment. It can be concluded from these studies that actors believe ability to be an important input, such that when their ability is deficient they compensate with higher productivity. Since effort was not manipulated in these studies, it is not possible to know whether actors would respond in the same fashion under low effort conditions.

Leventhal and Michaels (1969) used a different paradigm in order to test equity theory propositions, in that their subjects were required to create an equitable exchange by dividing a reward, rather than reduce an inequity by increasing production. Leventhal and Michaels (1969) had subjects work as partners on a jig-saw puzzle task, and led them to believe that they worked for either a longer or shorter period of time than their partner, and that they had completed either more or less of the puzzle than their partner. Subjects were specifically told that effort expendediture would be a major determinant of performance, while their abilities for the task would probably not differ, and so ability would not be a factor. The manipulations essentially created three groups; a below expectancy condition, in which performance was less than expected, two expectancy conditions, in which performance was

as expected, and an above expectancy condition, in which performance was greater than expected. As predicted, Leventhal and Michaels found that actors in the "below" condition took less than half the reward, actors in the "expected" condition took half the reward, and actors in the "above" condition took more than half the reward. Subjects' judgments of their efficiency per unit time revealed the same pattern of results. Actor subjects in Leventhal and Michaels were also asked to rate their own ability and effort expenditure, and these data revealed the following: (a) When the actor performed less well than expected, he judged his own ability for the task to be less than that in the other two expectancy conditions, and (b) the actor perceived his effort expenditure to be high regardless of the experimental condition. Thus, even though the actor subjects were told that effort would be a major determinant of performance while ability would not be, they attributed their poor performance only to lack of ability.

The self-reward and self-gratification literature (e.g., Masters & Peskay, 1972; Mischel, Coates, & Raskoff, 1968; Mischel, Ebbesen, & Zeiss, 1973; Rosenhan, Underwood, & Moore, 1974), although not derived from the equity theory literature, does apply to questions concerning how actors self-reward. Using eight-year old children as actors, Masters and Peskay (1972) found that children's self-rewarding behaviors were differentially responsive to success/failure feedback concerning performance on a maze task, and that these children recognized the concept of deserving (the dependent measure was obtained by the instruction to take as many reward tokens as they believed they deserved). To the extent that these subjects believed success to be a function of maze solving ability, perceived ability may have mediated the actors'

self-rewarding behavior, although Masters and Peskay (1972) obtained no measures of perceived ability or effort. Using college-age subjects, Mischel et al. (1973) found that successful actors subsequently attended more to their personal assets (positive personality traits) than did failure subjects, and to the extent that task ability is perceived to be a trait-like asset (see Weiner et al., 1971) this result suggests that successful actors may focus upon their own ability. Mischel et al. (1968) found that children also show increased non-contingent self-reward following success, and Rosenhan et al. (1974) demonstrated that this effect is due to increased positive affect following success. This body of research, although weak with respect to the relationships between ability, effort, and self-reward, does suggest several consequences of success that might simultaneously occur following a successful task performance. The actor may coincidently focus upon his assets, feel greater positive affect, and self-reward at a relatively high level, and it is possible that ability and/or positive affect mediate self-rewarding behavior.

To summarize the literature related to the rewarding behavior of actors, it is fairly clear that ability is a major focus for actors. Actors will perform in order to reduce inequity caused by their own low ability input, recognize low ability as a correlate of poor performance, and possibly experience positive affect and focus upon ability when they self-reward. It is also apparent from the Leventhal and Michaels (1969) data that actors ignored the experimenter's instruction that performance should be attributed to effort and not to ability. However, the research is not conclusive with respect to the differential roles of ability and effort in self-reward situations,

since few relevant studies exist, and furthermore, the input of effort expended is underrepresented.

Relatively more studies exist in the literature that examine or relate to the observer's perceptions of the relationship between ability, effort, and reward (e.g., Lanzetta & Hannah, 1969; Leventhal & Michaels, 1969; Leventhal & Michaels, 1971; Nicholls, 1976; Rothbart, 1968; Weiner & Kukla, 1970). In some of these studies the observer is a participant, in some the observer is required to role-play or imagine the actor, and in others the observer is passive and more remote from the actor.

As well as having actors judge their own ability and effort, Leventhal and Michaels (1969) had their subjects rate their partner's level of ability and effort, thus obtaining judgments from them as participant observers. The results showed that the partner's ability and his effort expended was perceived to be lower when the partner produced less than was expected, compared with the other three conditions. Thus, when making judgments about one's partner, both low ability and low effort are attributed to him when he produces less than expected, in contrast with self-attributions when only ability is perceived to be low.

In a study using passive observers as subjects, Leventhal and Michaels (1971) presented information about an actor's ability and effort in a within-subjects design. These observers were asked to assess the amount of reward deserved by the hypothetical actors for their performance on a jumping exercise task. Ability information was varied by providing observers with information about the actor's height, and effort was varied simply by telling the observers that the actor

did or did not try hard on the task. The results showed that high effort was rewarded significantly more than low effort, and that short actors (low ability) were perceived to deserve more than tall actors (high ability) for the same jump performance level. Weiner and Kukla (1970, in a similar design, had subjects role play a teacher assigning grades (gold or red stars) to students varying in their ability, effort, and performance. Consistent with the Leventhal and Michaels (1971) findings, high effort and low ability were rewarded more in all performance conditions. In a second experiment, Weiner and Kukla (1970) had student teachers judge the degree of pride or shame that they would experience following different ability, effort, and performance feedback about themselves, and thus these observers were role-playing the actor perspective. The results for the pride/shame dependent variable were identical with those for reward/punish--more pride was "experienced" following high effort and low ability information.

It is difficult to interpret the greater rewarding of low ability reported by Leventhal and Michaels (1971) and by Weiner and Kukla (1970). The designs were such that each observer made judgments on each of the stimuli, and so the observers would be able to compare two stimulus persons differing only on ability, but performing at the same level. Given this inconsistent information, these observers might have attributed greater effort to the low ability person in order to make sense of the greater-than-expected performance, and judged deserving solely on the basis of this greater effort. Since neither of these studies obtained judgments of effort expended, it is impossible to say whether or not this confound was present in their data. However, Rest, Nierenberg, Weiner, and Heckhausen (1973) reported a similar experiment with a

between subjects design and found that higher effort was attributed to the low ability stimulus person.

It is also difficult to categorize the participant's role in the second Weiner and Kukla (1970) experiment as observer, actor, or some other perspective having elements common to both. These subjects were asked to imagine that they were actors, and to judge their affective response to the ability and effort information as if it were true of themselves. Since these subjects might have successfully role-played the actor perspective or might equally have projected the observer role judgments onto the actor, it is not possible to conclude how real actors, or real observers, would perceive an actor's affective response to ability and effort information.

Nicholls (1976) asked observers either a pride/shame question similar to that used by Weiner and Kukla (1970), or a question which asked which of two stimulus persons the observer would prefer to be. These observers believed that the actor experienced more pride when he had low ability and high effort compared with high ability and low effort, but they expressed a preference for being the person with high ability and low effort. However, comparisons between these two sets of data are difficult, since it is very likely that the observer's perspective changed substantially as a function of the question asked. When asked to judge the experience of pride or shame they are probably more like observers than when asked which stimulus person they would prefer to be. It may have been easier for subjects to take the actor perspective when answering the person preference question, since the focus of the question was upon themselves, and if so, the results imply that actors would favour high ability over high effort, at least over the long term.

Nicholls (1976) justified his question manipulation by arguing, in part, that the pride/shame question refers to a specific instance, while the person-preferred question has long term implications. Given this question difference, and the suggestion of Jones and Nisbett (1972) that actor-observer differences in causal attributions are in part due to information from extended time versus a slice of time respectively, it is possible that by asking different questions, Nicholls manipulated to some unknown degree the dimension of actor-observer perspective. If this were the case, it implies that actors are effectively influenced by ability information while observers perceive the actor to be more affectively influenced by effort information.

Lanzetta and Hannah (1969) and Rothbart (1968) employed settings in which the observer was a participant in an ongoing interaction in which subjects were to reward or punish an actor on each trial in order to effect a change in performance. In the Lanzetta and Hannah study, the task of subjects was to teach an easy or difficult task to a competent (high ability) or incompetent (low ability) actor. Although effort was neither manipulated nor measured, it might be expected that the incompetent actor who achieved an acceptable level of performance was perceived to have tried harder, especially in the difficult task conditions, and the results showed that this actor was punished less following failure to learn, and that observer-trainers even tended to follow such a trial with reward. Without considering the potential confounding of ability and effort inputs, the Lanzetta and Hannah (1969) results are very similar to those of Leventhal and Michaels (1971) and Weiner and Kukla (1970), in that the low ability actor received more reward than the high ability actor.

Using a similar setting, Rothbart (1968) found that participant observers believed punishment to be the most effective means of increasing motivation. Therefore, observers who use punishment but who do not realize an improvement in their trainee's performance should reason as follows: (a) punishment is a strong motivator, I have punished the worker, therefore he should be highly motivated, and (b) the worker is highly motivated, yet does not show a performance increase, therefore he must lack ability. However, these observers did not attribute low ability to the worker who failed, but perceived lack of effort as the cause of poor performance. This result suggests that observers ignore ability and emphasize effort as the cause of the poor performance of an actor.

In summary, even though the research comes from diverse experimental paradigms and theoretical backgrounds, it is apparent that observers are greatly influenced by effort information when evaluating an actor's performance. All of the research reviewed here either directly or indirectly supports this conclusion. The way in which observers make use of ability information when rewarding performance is not clear. Some of the research indicates that low ability results in greater reward, but the probable confounding of perceived ability and effort in these studies makes a conclusive summary of the findings impossible. Furthermore, in Rothbart's study (1968) a logical attribution to ability as a cause of failure was avoided by observers, suggesting that observers do not consider ability as a factor at all, and Leventhal and Michaels (1969) obtained data that suggest that observers might perceive poor performance by an actor to be caused by both low effort and low ability.

Of concern for the present research are the differential uses to

which ability and effort information are put by actors and observers when providing rewards and judging the deservedness of the actor's performance. From the review of the literature, it can be concluded that ability is probably the major focus for actors, while effort is certainly the major focus for observers. Such an empirical generalization, however, must be tempered by the following observations: (a) The data are from diverse theoretical backgrounds and differing experimental paradigms, and so the results cannot easily be compared, either in terms of perspective differences or in terms of ability and effort manipulations and measures; and (b) research dealing with the actor perspective is relatively rare, and only a few of these studies provide information concerning the relationship between self-reward and effort expended. Thus, while the literature suggests that ability information is important in self-reward settings, effort might also be important, and while effort is an important criterion for observers, the function of ability information for observers' rewarding behaviors is unclear, and perhaps variable from situation to situation. A more theoretical approach to the question of self- and other-reward in response to ability and effort information is necessary in order to make firm predictions for the present research.

Jones and Nisbett (1972) have presented a general hypothesis and a theoretical rationale that compares and contrasts the types of causal judgments made by actors and observers. Their hypothesis states that actors will tend to emphasize situational forces as causes for their own behavior, while observers will tend to emphasize the actor's personal dispositions as causes for his behavior. Jones and Nisbett cite several informational differences and immediate perceptual

differences (differential salience) as factors facilitating the hypothesized divergence of causal ascriptions. Even though both ability and effort are generally considered to be dispositional causal forces (Weiner et al., 1971), a consideration of Jones and Nisbett's rationale for the general hypothesis is useful in developing predictions about the weightings of ability and effort information in self- and other-reward situations. Predictions will be derived only for a very specific situation in which actors and observers do not interact, and in which ability and effort information about the actor are explicitly provided to both the actor and observer.

The Jones and Nisbett (1972) discussion primarily centers around behaviors for which the actor and observer must infer causes or explanations, and even though their hypothesis states that actors prefer to cite situational causes while observers prefer to cite dispositional causes, Jones and Nisbett do not deny that dispositional causes are perceived by actors or that situational causes are perceived by observers. There probably exist many behaviors for which persons from both perspectives primarily consider dispositional causes, but due to perspective differences might emphasize different dispositions. With respect to an actor's inputs, for example, all are essentially dispositional or internal to the actor, yet there may be theoretical grounds for predicting differential weightings of these inputs by actors and observers.

Jones and Nisbett (1972) discuss two general bases from which divergent actor-observer attributions presumably arise, informational differences and salience differences. Informational differences exist in large part because observers only have data from a "slice of time"

whereas actors can view their behavior as "more extended in time" (Jones & Nisbett, 1972, p.84). The extended time viewpoint provides the actor with information about a sequence of events leading to the behavior under consideration, information often not available to an observer. For example, the actor might perceive his poor performance to be due to over-concern with family problems, or his good performance to be due to a good sleep and a healthy breakfast. But neither of these perceived causes of performance level constitute inputs in an equity situation deserving of rewards or outcomes, and the actor should not perceive them as such. The observer, on the other hand, does not have this extended time cause data, but can only infer cause from the momentary behavioral and situational data. Since the observer only has available the actor's performance, any inferences about the causes of that performance can be labelled as inputs deserving of outcomes. Whether or not the cause is attributed to dispositional or situational forces, the observer will include fast or slow work, for example, as indicators of the actor's inputs.

The actor also has historical information about himself and the task that an observer does not have. The actor knows of his past performance levels and of his previous best performance level, both criteria for estimating ability (Weiner et al., 1971). He knows of his experience and training at the task, and these also are ability class inputs. Historical data provide the actor with the consistency information necessary for judgments of ability level, while observers, who lack all or part of these past history data, have little basis for inferring ability.

Jones and Nisbett (1972) also propose that different aspects of

the available information are salient for actors and observers, thereby widening the attributional discrepancy. Specifically, actors focus more upon the environmental stimuli in the presence of which they behave, and observers focus upon the actor's behavior within a seemingly stable and contextual environment; causal attributions are then made with respect to these salient cues (also referred to as attentional differences between actors and observers).

The most salient feature in the environment for the actor is the task at hand, as it is the major feature in the environment which requires action. In focusing upon the task the actor should then attend most to those inputs relevant to the performance of the task. Since features of the task such as familiarity and difficulty will likely be salient for this purpose, focusing on the task can be expected to elicit cognitions about past experiences with similar tasks or the same task, about the ease or difficulty of the task for the actor, or about the perceived probability of success or failure at the task. These thoughts are all related to the ability class of inputs, and most will be criteria for estimating one's ability for the task (Weiner et al., 1971). The actor will not be in a position to physically observe himself while performing the task, and so will not have salient evidence of physical exertion or other internal states indicative of effort (Bem, 1972). Even if some internal state is perceived, it might well be confused with anxiety due to any anticipated poor performance, since task demands will be salient for the actor.

Heider's (1958) distinction between the two components of can--native ability and environmental constraints--also suggests that by focusing upon the task the actor will perceive ability to be salient.

According to his naive analysis of action, Heider (1958) states that the actor perceives that he can perform a task only when he has sufficient ability to overcome the situational forces. Thus, when the task is salient for the actor he considers the demands of the task in conjunction with his knowledge of his own native ability in order to determine whether he can or cannot perform the task. Even though actors may typically focus attention outward, the analysis of can in task situations will bring the actor's attention to his own ability. Try, which is synonymous with effort, is solely a personal causal factor, whereas can has both personal and environmental components. Since, for the actor, environmental causes are more salient than personal causes, ability will be more salient than effort.

For the observer the salient feature in the situation is what the actor produces and how he produces it. The observer cannot see ability, but can only infer it through an appraisal of the finished product and the actions performed to produce it. The actions attendant upon performance are figural aspects of the situation, and will be salient for the observer, while the task itself constitutes a part of the perceptually stable environment. This focus upon action should provide the observer with more information about the actor's effort (an unstable and dynamic element) than about ability. It may also be the case that the observer may lack direct experience with or understanding of the task demands, and so fail to appreciate the relevance of ability. He may simply assume that any normal person can effectively perform the task if he tries, and so effort and not ability will be the criterion used by observers to discriminate the actor's deserving.

While action and effort may be more salient for observers in more general situations, the present research employs a situation in which

the observer cannot see the actor perform. For such an observer, therefore, nothing will be salient until the ability and effort feedback are provided, and so perceptually both inputs should be equally salient at the time that the information about them is provided. If this is all that is involved in the situation for observers, they should weight ability and effort equally when assessing the actor's deserved outcomes.

However, the observer's task is not simply to acquire causal information about the actor's behavior; he must make use of the acquired information in assessing the actor's deservedness. The observer must respond by providing a reward for the actor based upon equally salient ability and effort information. It is proposed here that ability and effort are differentiated by the observer on the basis of a functional salience even though perceptually there is no difference. Deservedness is conceptually related to concepts like praise and punishment in that they all share a moral quality. Likewise, effort has been culturally imbued with a moral quality, in that hard work is good while laziness is bad. By comparison, ability has not acquired a moral quality, and thus cannot be used in this context to differentiate between the equally salient inputs. It might be predicted, then, that observers will differentiate between the equally salient ability and effort inputs by emphasizing effort, that input which is functionally more salient for the task of assessing deservedness.

While it is not expected that observers will be subject to any motivational forces or biases, actors might well be. Even though the motivations to predict (Jones & Nisbett, 1972) and control (Kelley, 1972) can be dismissed, since the usefulness of these motivations is limited to situations in which future similar interactions are expected, it is highly probable that self-protective biases will be operable. It

has been argued above that actors will perceive ability to be more important than effort, for a number of reasons. Social comparison theory (Festinger, 1954) also suggests this relative importance, stating that persons have a need to know and evaluate their own abilities, and that it is through the comparison of one's own abilities with the abilities of others that an actor identifies his social position with respect to the abilities in question. In a way, then, one's ability level confers status, and a motivation may well be present to protect one's status by distorting the perception of one's ability. Low ability information would be expected to be modified upward to protect against status loss, while high ability might similarly be adjusted upward as a method of status enhancement. The overall effect of such a self-protective bias might be to increase self-reward at all levels of ability, yet not eliminate the effect of ability upon self rewards. It is not expected that effort is subject to self-protective motivations, however, since effort is not permanent and therefore should not affect the actor's comparisons between himself and others.

From the point of view of equity theory, one's outcomes should be directly proportional to one's inputs, and outcomes or rewards will be provided based upon the perceptions of the value of the inputs, regardless of perspective. It has been argued that actors perceive ability to be a more important input than effort; therefore, the actor's perception of the magnitude of his inputs will be greatly affected by his perceived ability, and less so by perceived effort, and his self-rewarding behavior will be similarly affected. It has also been argued that for the general case observers perceive effort to be more important than ability, while in the more restricted case, in

which ability and effort information are provided, there is little theoretical reason for predicting any difference. However, to the extent that the observer's usual method of weighting input information generalizes to the restricted case, some emphasis of effort over ability would be expected. Effort will be perceived to contribute more to the actor's inputs than ability, and rewarding the actor will therefore be affected more by effort than by ability.

A social learning analysis (Bandura, 1971) makes similar predictions. If, under general circumstances, actors perceive their own ability to be the most salient cue signalling reward, then when provided with both ability and effort information as cues for reward, ability will have the major effect upon self-reward. Likewise, observers who in general perceive effort to be the cue signalling reward for others should continue to use effort as the relevant input to be rewarded, even though ability is equally salient.

Design Overview

The above major predictions of the present research, if confirmed, will be revealed by the following significant effects for the reward measure: (a) an ability by perspective interaction, such that the difference between high and low ability conditions for actors will be greater than that for observers, and (b) an effort by perspective interaction, such that the difference between high and low effort conditions for actors will be less than that for observers. Whether effort will be a significant factor for actors, or ability a significant factor for observers, cannot be predicted given the present theoretical rationale for the predictions.

The research designed to test these hypotheses factorially

manipulated the actor's ability and effort inputs in a between subjects design, and then provided actors and observers with the opportunity to reward the actor for the work which he did. Weiner et al. (1971) state that ability information is acquired through past experiences with the same or similar tasks. Therefore, in order to effectively manipulate perceived ability, actor subjects performed an initial task very similar in kind to the main task, and were led to believe that their score on the initial task predicted their ability.

The task chosen for the experiment had to be relatively easy to understand, yet unfamiliar to the participants, or else their prior experience would interfere with the ability manipulation. The task which was judged to meet these criteria was finding embedded words in rows of randomly ordered letters. This task was also appropriate because the need for perceptual abilities seemed to be inherent in it, while intellectual skills, about which false feedback might be aversive, were only slightly involved. Such a task also made it easy to devise an initial task which credibly might measure natural ability. This task consisted of locating a simple combination of letters within rows of letters, and it was expected that, phenomenally at least, subjects would have no problem believing that ability transfer between the two tasks was high.

Weiner et al. (1971) state that an important determinant of perceived effort consists of physiological cues. Therefore, the effort manipulation took the form of bogus feedback concerning the actor's change in GSR from a resting state to a working state. By manipulating effort and ability in these ways, it was expected that subjects would perceive the ability and effort feedback to be completely independent

of each other, since different instruments were being used.

While ability and effort information can be independently manipulated, perceived level of performance might well be perceived to differ as a function of the different combinations of ability and effort. To keep perceived performance constant, subjects were provided with performance feedback as well, and it remained constant regardless of experimental condition.

Although the rationale and predictions concern actors and observers only, a third perspective condition was included in the research for exploratory purposes. These subjects were considered to be co-actors, as they performed the same tasks as the actor but did not receive feedback concerning themselves. From this perspective, the co-actor has the same knowledge of the task as the actor, and one might predict on that basis that his rewarding behavior would parallel that for the actor, except for any motivational bias. On the other hand, the co-actor is an observer of another's inputs and must reward another for his inputs, and in this respect is more like the observer. Because of this complication of roles, no predictions are made for the rewarding behavior of co-actors. If the co-actor in this design has the role similar to that of a colleague or co-worker, data from the co-actor should provide interesting information about how one colleague evaluates the work of another.

Data from several other dependent measures were also collected in order to test several secondary predictions. It was expected that perceived success and perceived affect would be influenced more by ability for actors, but more by effort for observers. It was also expected that observers would perceive the actor to have dispositional

qualities compatible with the ability and effort feedback, while actors would tend not to perceive such dispositions (Jones & Nisbett, 1972). It was also expected, from Jones and Nisbett, that observers would perceive more stability and consistency in the actor's task performance across future occasions than would the actor himself.

Method

Subjects

One hundred and thirty-three male undergraduates served as subjects. Subjects were recruited in unacquainted triads and were randomly assigned to one of the three perspective conditions (actor, observer, or co-actor). In addition, each triad was randomly assigned to either the high or low ability condition and either the high or low effort condition.

Apparatus and Materials

In the experimental room were three booths, one for each member of the triad. On the table in each subject's booth were twenty poker chips (reward tokens), an envelope, a set of headphones, and a person assignment card labeled Person 1, Person 2, or Person 3. In addition, there was a wrist band with two copper electrical pick-ups with wires leading to the outside of the booth on the actor's (Person 1's) table. These wires were attached to a non-operative GSR recording device situated on the experimenter's table.

The task materials consisted of a page of twenty lines of randomly ordered letters. For Task 1, the letter-crossing task, the actor and co-actor were to cross-off every a and o which occurred within four spaces of another a or o. For Task 2, the word-finding task, the actor and co-actor each received a sheet of randomly ordered letters identical to those used in Task 1, but were instructed to locate as many words as possible embedded within the rows. They were to indicate the words found by underlining them.

While the actor and co-actor worked on Tasks 1 and 2, the

observer was required to complete a Work History Report. This form consisted of three identical pages, and the observer was asked to use the questions on those pages to describe his last three jobs. He was briefly to describe the type of job and the type of company worked for, and then to rate his enjoyment of the work on several bi-polar scales. This task for observers was essentially a filler task, and none of the questions contained in it referred to any of the variables of interest to the experiment.

Procedure

Upon arrival at the experimental room, each subject was isolated from the others in his own booth. No visual contact between subjects was possible, and no verbal contact was allowed until the end of the session. All instructions were taped and were delivered over headphones; task feedback was presented live over headphones.

The experiment was described as concerned with work situations. The purpose, as described to subjects, was to obtain their perceptions of a working person and the work which he does. During the instructions, subjects were referred to by the numbers on their person assignment card: Person 1 was the actor, Person 2 was the co-actor, and Person 3 was the observer. It was explained that Persons 1 and 2 would each work on two tasks, and that Person 3 would complete the Work History Report and then observe the work which had been done. Subjects were told that following both tasks and feedback concerning the tasks, they would complete a questionnaire concerning one of the workers. The worker who was to be the target of the questionnaire and feedback was not identified until feedback was actually given.

Before the first task the experimenter explained that he was helping

to collect sample GSR data for a researcher in the Physical Education Department. He further noted that collection of the GSR data was well suited to his interest in work, since GSR was an excellent measure of effort expenditure. The GSR measurement device was described as being very sensitive, and could even detect changes in a person's level of concentration. It was explained that, since only one recording device was available, only Person 1 would have his GSR recorded. The electrodes for the recording device were attached to Person 1 just prior to the beginning of Task 1, though he was told that he would not be recorded until the instructions for Task 2 were read. Subjects were not told that they would be receiving feedback regarding Person 1's GSR at that time.

Task 1, the letter-crossing task, was described as a practice session for the second task. However, it was stressed that scores on this task were excellent predictors of natural ability for Task 2, though it would not necessarily accurately predict performance on Task 2. Each subject, including the observer, was shown examples of how the task was to be performed. Subjects were told that they were not expected to complete the entire page in the allotted time (5 minutes), and that scoring for Task 1 would take into account correct cross-offs, incorrect cross-offs, and letters missed. While Persons 1 and 2 worked on this task, Person 3 began completing the Work History Report.

When the time for Task 1 elapsed, the experimenter collected the task sheets, and recorded instructions for Task 2 (the word-finding task) were presented. During this time the GSR baseline data from Person 1 were ostensibly recorded. Scoring for Task 2 was described as similar for that for Task 1, but more time consuming. Subjects were

therefore told that only a preliminary score could be given, although it would be within ten or fifteen points of the final performance score. Persons 1 and 2 worked on this task for five minutes, while Person 3 finished the Work History Report. As before, all subjects were shown examples of how Task 2 was to be performed prior to beginning the actual task.

At the end of Task 2 all task materials were collected, and the following live feedback was presented to all subjects via their headphones:

> I have now scored the results of the predictor task for Person 1. Remember that scores from the letter-crossing task predict a person's natural ability for the main task; that is, a high score on the letter-crossing task means that you have high natural ability for the work-finding task, and that a low score means low ability.
>
> (<u>High ability conditions</u>) Person 1's score on the predictor task is quite good, meaning that he has high natural ability for the word-finding task.
>
> (<u>Low ability conditions</u>) Person 1's score on the predictor task is fairly poor, meaning that he has low natural ability for the word-finding task.
>
> I also have a preliminary analysis of Person 1's GSR score, and I will describe it to you now. Since the numbers will probably mean little to you, I will describe his GSR as it reflects his effort expended at the word-finding task, and I will show all of you the actual graph later.

Remember that the GSR measure is an excellent measure of effort expended at a task, or how hard a person trys while working at a task. Also, large changes from the base-line measure, recorded while the instructions for the task were read, indicates a large amount of effort expended, and small changes mean that very little effort was expended while performing the task.

(High effort conditions) Person 1's GSR score shows a large increase during performance of the word-finding task. This much increase shows that he expended much effort while working at this task.

(Low effort conditions) Person 1's GSR score shows a small increase during performance of the word-finding task. This small increase shows that he expended very little effort while working at this task.

In all ability and effort conditions, performance feedback was identical. The experimenter explained that Person 1's score was at about the seventieth percentile, but that this was only a preliminary score which could change by as much as ten or fifteen points. It was pointed out that this score did not necessarily reflect Person 1's ability and effort, but that it could be a reflection of other factors as well, including type of task, Person 1's past experience with similar tasks, or luck. It was also stated that ability and effort were most accurately measured by the results on Task 1 and the GSR score, respectively.

Following this feedback, subjects were individually shown a table which defined the relationship between Task 1 score and natural ability, as derived from "extensive pre-testing." The actor's raw score and derived natural ability level were explicitly depicted. A GSR graph, ostensibly recorded from Person 1, which indicated either a large or a small increase during Task 2 relative to baseline, was also shown to all subjects. These devices were used to emphasize the salience and accuracy of the verbally presented ability and effort feedback manipulations.

Dependent Measures

The major dependent measure was the number of reward tokens each person provided for Person 1, the actor. The instructions for providing these reward tokens were written, and read as follows:

> You now have three pieces of information about Person 1 and the work he has done: You know his natural ability, as measured by the letter-crossing task (which is _____); you know how much effort he expended during the word-finding task, as measured by his GSR (which was _____); and you know his performance score on the word-finding task. On the table in front of you are 20 reward tokens and an envelope. What I would like you to do is to place a number of reward tokens into the envelope. The number of tokens should reflect your own perception of the size of reward which you think Person 1 deserves for his performance on the second task. In other words, you should reward him with a number of tokens depending upon how much you think

his work is worth. In a minute I will collect the envelope and give you a short questionnaire.

The appropriate changes were made for the actor's copy of these instructions, and labels appropriate to the experimental condition were inserted in the blanks.

The envelopes were then collected, and each subject was given a questionnaire which contained items pertaining to Person 1 and his work. Included were items to check the effectiveness of the manipulations, items to assess the various inputs (including ability, effort, performance, task difficulty, and luck), and items to assess perceived success, affect, and, for Persons 2 and 3, attraction towards Person 1. Subjects were also asked to explain the basis for their rewarding behavior, that is, to explain why they thought Person 1 deserved the number of reward tokens which they provided for him.

Following administration of the questionnaire, subjects were probed for suspiciousness and fully debriefed. Special care was taken with the actor subject during debriefing to ensure that the negative feedback conditions (low ability and/or low effort) had no lasting effects.

Results

Of the 133 subjects who participated in the experiment, 13 were excluded from the analysis, leaving 10 subjects per condition. Of these 13, five were suspicious of the manipulation feedback, five failed to follow instructions, and three were dropped due to procedural errors.

Since the predictions were made with reference to actors and observers only, the results are reported in two ways. The results and analyses are always reported for the complete design, and are then reported with the data from co-actors excluded and their analyses reported separately. This will be reported for all the major dependent measures and for those variables for which different significant effects are found.

Manipulations

Subjects were asked upon completion of the questionnaire to report (a) whether the actor had high or low ability for the word-finding task, and (b) whether he showed high or low effort while working on this task. Ninety-two percent of the subjects correctly identified the ability condition, and 97% correctly identified the effort condition. There were no differences among perspective conditions. It can be concluded that the ability and effort manipulations were effective in placing the actor subject into the appropriate ability and effort categories.

In addition to the forced-choice manipulation check items, subjects responded to two 9-point scales which assessed their perceptions of the ability and effort inputs of the actor. For the item assessing ability there was a significant Ability main effect, F (1,108) = 60.93, p<.001, and a significant Ability x Perspective interaction, F (2,108) = 3.86,

$p<.05$. An analysis excluding the co-actor data also revealed a significant Ability main effect, F (1,72) = 44.61, $p<.001$, and a significant Ability x Perspective interaction, F (1,72) = 8.71, $p<.01$. Differences among means were assessed with the Duncan's multiple range statistic (see Table 1). This analysis revealed a significant Ability main effect regardless of perspective, but the effect was smaller for actors than for observers and co-actors. Similar results were obtained for the item which assessed perceived effort. There was a significant main effect for Effort, F (1,108) = 323.4, $p<.001$, a significant main effect for Perspective, F (2,108) = 10.14, $p<.01$, and a significant Effort x Perspective interaction, F (2,108) = 37.17, $p<.001$ (see Table 1). Similar results were obtained when the data from co-actors were excluded. An examination of the interaction means showed that in the low effort conditions actors perceived themselves to have tried harder than either observers or co-actors perceived them to have tried, although actors did perceive themselves to have tried harder in high effort conditions compared with low effort conditions. No other effects in either of these analyses approached significance.

Items which assessed level of performance, task difficulty, and the contribution of good or bad luck towards the actor's performance were also included in the questionnaire. The only significant effect among these variables was that performance level was perceived to be greater in high ability conditions (M = 6.78) compared with low ability conditions (M = 5.75), F (1,108) = 22.94, $p<.001$. No other effects were significant.

It can be concluded that the ability and effort feedback did in fact manipulate the subjects' perceptions of the actor's inputs as expected, and that no other extraneous causes of performance (that is,

TABLE 1

PERCEPTIONS OF THE ACTOR'S LEVEL OF ABILITY AND EFFORT

Variable		Perspective		
		Actor	Observer	Co-actor
Perceived Ability	High Ability	6.25_{a}	6.85_{a}	7.10_{a}
	Low Ability	5.05_{b}	3.75_{c}	4.85_{b}
Perceived Effort	High Effort	7.00_{a}	7.90_{b}	7.80_{b}
	Low Effort	5.85_{c}	2.95_{d}	3.85_{d}

Note. Higher numbers indicate greater perceived ability or greater perceived effort expenditure. Means having different subscripts differ significantly at $p<.05$ by Duncan's multiple range test.

task difficulty and luck) were differentially perceived as a function of the feedback.

Deservedness Measure

Analysis of the deservedness measure, the number of reward tokens provided for the actor, revealed a significant main effect for Effort, F (1,108) = 40.84, $p<.001$, and a significant Effort x Perspective interaction, F (2,108) = 4.66, $p<.02$. The Ability x Effort interaction was marginally significant, F (1,108) = 3.80, $p<.054$, and no other effects approached significance. Excluding co-actors from the analysis revealed the same effects; F (1,72) = 27.23, $p<.001$ for the Effort main effect, F (1,72) = 9.28, $p<.01$ for the Effort x Perspective interaction, and F (1,72) = 3.84, $p<.054$ for the Ability x Effort interaction. An analysis of the data from co-actors revealed only a significant effect for Effort, F (1,36) = 13.61, p<.001. Analysis of the Effort x Perspective interaction means with the Duncan's multiple range statistic revealed that (a) rewarding behaviors did not significantly differ between perspective conditions when effort was high, but observer subjects rewarded fewer tokens than did actors ($p<.05$) or co-actors ($p<.06$) when effort was low, and (b) actors did not differentially reward themselves as a function of effort feedback, while observers and co-actors did (see Table 2 for means). Analysis of the Ability x Effort interaction showed that while ability had no effect when effort was high, in low effort conditions low ability actors were awarded fewer tokens than were high ability actors ($p<.05$). Further inspection of the cell means shows that this effect was most pronounced for observers.

Subjects were also asked to cite reasons for the magnitude of the reward provided for the actor. These reasons were tabulated separately

TABLE 2A

THE NUMBER OF TOKENS PROVIDED FOR THE ACTOR

Perspective		Actor		Observer		Co-actor	
Ability condition		High	Low	High	Low	High	Low
Effort condition	High	14.1	14.6	15.9	15.5	15.3	15.6
	Low	13.7	11.7	11.2	6.5	11.7	10.6

TABLE 2B

THE NUMBER OF TOKENS PROVIDED FOR THE ACTOR AS A FUNCTION OF EFFORT AND PERSPECTIVE CONDITIONS

		Perspective		
		Actor	Observer	Co-actor
Effort condition	High	14.35_{ab}	15.70_{a}	15.54_{a}
	Low	12.55_{bd}	8.85_{c}	11.15_{d}

TABLE 2C

THE NUMBER OF TOKENS PROVIDED FOR THE ACTOR AS A FUNCTION OF ABILITY AND EFFORT CONDITIONS

		Ability condition	
		High	Low
Effort condition	High	15.10_{a}	15.23_{a}
	Low	12.10_{b}	9.60_{c}

Note. Means having different subscripts differ significantly from each other at $p<.05$ by Duncan's multiple range test.

for actors, observers, and co-actors, and were classified into three categories: ability, effort, and performance reasons. If a subject gave two or three reasons, each was categorized as long as the reasons fit different categories. No subject contributed more than one reason to a category, and only three subjects (one observer and two actors) failed to provide a classifiable reason. Five actors, 18 co-actors, and 15 observers provided more than one reason. The frequencies of reasons falling within each category for each perspective condition are reported in Table 3, and an analysis of these data showed that the reasons for reward cited by actors differed from the reasons cited by observers and co-actors, χ^2 (4) = 10.01, $p<.05$. An examination of the cell frequencies shows that, whereas observers and co-actors cited effort reasons slightly more often than performance reasons, actors reported rewarding themselves far more on the basis of performance than on effort. Few subjects cited the actor's level of ability as a factor influencing their rewarding behavior.

Perceived Success and Affect

All subjects were asked to judge the degree of success experienced by the actor with respect to the experimental tasks on a 9-point scale. Actors were perceived to be more successful in high ability conditions (Ms = 6.98 versus 5.60), F (1,108) = 33.24, $p<.001$, and in high effort conditions (Ms = 6.65 versus 5.93), F (1,108) = 8.92, $p<.01$. No other main effects or interactions were significant. However, inspection of the means for the Effort x Perspective interaction (see Table 4) suggests that actors did not perceive their own success differentially as a function of the effort feedback.

Subjects were also asked to describe as best they could how the

TABLE 3

FREQUENCIES OF THE THREE CATEGORIZED REASONS FOR REWARD AS CITED BY ACTORS, OBSERVERS, AND CO-ACTORS

	Reason Category		
Perspective	Ability	Effort	Performance
Actor	3	10	31
Observer	6	25	22
Co-actor	7	27	26
Totals	16	62	79

TABLE 4

PERCEIVED SUCCESS AS A FUNCTION OF EFFORT AND PERSPECTIVE

	Perspective		
	Actor	Observer	Co-actor
High effort	6.15_{bc}	7.00_{a}	6.80_{ab}
Low effort	6.00_{c}	5.95_{c}	5.85_{c}

Note. Means with different subscripts differ from each other at $p<.05$, Duncan's multiple range test.

actor felt after receiving the ability and effort feedback, on five 7-point bipolar scales. These scales consisted of the following: happy/sad, pleased/displeased, proud/ashamed, good/bad, and satisfied/dissatisfied. All of these measures of perceived affect were summed, and an analysis of these data revealed a significant main effect for Ability, F (1,108) = 62.0, $p<.001$, and for Effort, F (1,108) = 7.64, $p<.05$. Subjects believed that both high ability and high effort made the actor feel better. Further analysis excluding the data from co-actors revealed similar main effects of Ability and Effort, but the effect for effort was qualified by a significant Effort x Perspective interaction, F (1,72) = 3.98, $p<.05$ (see Table 5 for means). Comparisons between these interaction means using the Duncan's multiple range test revealed that while observers believed that the actor felt better following high effort feedback, the actors themselves did not report this difference. A separate analysis of the data from co-actors revealed only a significant effect for Ability, F (1,36) = 10.04, $p<.01$, and no other effects approached significance.

Analyses of the individual scales revealed a similar pattern of results, with the exception of the item assessing perceived satisfaction. Only the Ability main effect was significant, F (1,108) = 34.91, $p<.001$, and in addition there was a significant Effort x Perspective interaction, F (2,108) = 4.20, $p<.05$ (see Table 6 for means). A Duncan's range test revealed that observers perceived the actor to be more dissatisfied following low effort feedback when compared with high effort feedback, while actors did not. Observers also perceived the low effort actor to be more dissatisfied than the actor perceived himself to be. Similarly, an analysis excluding co-actors revealed a significant main

TABLE 5A

MEANS OF THE SUM OF THE FIVE SCALES WHICH MEASURED THE PERCEIVED AFFECTIVE RESPONSE OF THE ACTOR FOLLOWING FEEDBACK

	Perspective		
	Actor	Observer	Co-actor
High effort	16.55_{a}	15.25_{a}	14.50_{a}
Low effort	17.25_{ab}	20.20_{b}	16.15_{a}

Note. The higher the mean score, the more negative the perceived affect. Means with different subscripts differ from each other at $p<.05$, Duncan's multiple range test.

TABLE 5B

AFFECTIVE RESPONSE AS A FUNCTION OF ABILITY AND PERSPECTIVE

	Perspective		
	Actor	Observer	Co-actor
High ability	13.20_{a}	13.50_{a}	12.85_{a}
Low ability	20.60_{bc}	21.95_{c}	17.80_{b}

Note. The higher the mean score, the more negative the perceived affect. Means with different subscripts differ from each other at $p<.05$, Duncan's multiple range test.

TABLE 6

PERCEPTIONS OF THE ACTOR'S SATISFACTION AS A FUNCTION OF PERSPECTIVE AND EFFORT FEEDBACK

	Perspective		
	Actor	Observer	Co-actor
High effort	3.75_{ab}	3.00_{ac}	2.75_{c}
Low effort	3.05_{ac}	4.05_{b}	3.30_{abc}

Note. The higher the score, the less satisfied the actor was perceived to be. Means with different subscripts differ from each other at $p<.05$, Duncan's multiple range test.

effect for Ability, F (1,72) = 31.97, p<.001, and a significant Effort x Perspective interaction, F (1,72) = 7.77, p<.01, and only the Ability main effect was significant for co-actors, F (1,36) = 4.86, p<.05.

Observers and co-actors were asked the extent to which they would enjoy working with the actor. The main effects for Ability, F (1,72) = 14.54, p<.001, and for Effort, F (1,72) = 34.95, p<.001, were both significant. Subjects were more willing to work with an actor who had high ability (M = 6.00) and who tried hard (M = 6.28) than with an actor who had less ability (M = 5.00) or who expended less effort (M = 4.73). Analysis of the co-actor data revealed only a main effect for Effort, F (1,36) = 16.43, p<.001, and the main effect for Ability was nonsignificant, F (1,36) = 1.62, p>.20. Co-actors did not differentially express a willingness to work with the actor as a function of ability feedback (M = 5.95 versus 5.40 for high and low ability, respectively).

Situation Versus Disposition

Several questionnaire items were addressed to situation/disposition judgments for the actor's task performance. Subjects were asked to judge on a 9-point scale how the actor could be expected to perform on a similar task, with the end-points labeled "much the same" (1) and "much differently" (9). Both the Ability, F (1,108) = 5.93, p<.05, and Effort, F (1,108) = 6.92, p<.05 main effects were significant. Performance on a similar task was judged to be more similar in the high ability conditions (Ms = 3.47 versus 4.30) and in the low effort conditions (Ms = 3.43 versus 4.33). However, when the data from co-actors were excluded from the analysis, neither main effects nor interactions approached significance. Only the data from co-actors, when analysed separately, yielded significant Ability, F (1,36) = 4.89, p<.04, and Effort, F (1,36) = 6.58, p<.02, main effects.

Subjects were also asked to estimate the actor's potential or chance for improvement on a scale labeled "very little" (1) and "very much" (9). Analysis of these data revealed a significant Ability x Effort interaction, F (1,108) = 4.62, $p<.05$, and a significant Ability x Effort x Perspective interaction, F (2,108) = 3.31, $p<.05$ (see Table 7 for means). An analysis using Duncan's multiple range statistic was performed to investigate the nature of the three way interaction. Actors perceived themselves to have more chance for improvement if either their ability (M = 6.5) or effort (M = 6.8) is low, but less chance when both ability and effort are either high (M = 5.1) or low (M = 4.9). Co-actors perceived less chance for improvement only when both ability and effort were high (M = 4.7 versus M = 6.1 in the other three conditions). And observers perceived the greatest chance for improvement only when both ability and effort are low (M = 6.5 versus M = 5.27 for the remaining conditions). In summary, actors perceived potential for improvement only if one or more of the inputs were low, co-actors perceived potential if one or more of the inputs were low, and observers perceived potential to be greatest only when both inputs were low. The pattern of means for the Ability x Effort interaction (see Table 7) was very similar to that found for the co-actor subjects, in that potential is perceived to be the least when both inputs were high. These results were not predicted, and are inexplicable in terms of current attribution theory, and will not be discussed further.

Subjects were also asked two questions directly related to the dispositional characteristics of the actor: (a) how lazy/industrious, and (b) how intelligent is he. Both observers and co-actors believed the actor to be lazier in the low effort conditions, while actors did not; F (2,108) = 20.90, $p<.001$ for the Effort x Perspective interaction

TABLE 7A

PERCEPTIONS OF THE ACTOR'S POTENTIAL, OR CHANCE FOR IMPROVEMENT

	Perspective					
	Actor		Observer		Co-actor	
Ability condition	High	Low	High	Low	High	Low
High effort	5.1_{ab}	6.5_{c}	5.1_{ab}	5.4_{ab}	4.7_{a}	6.7_{c}
Low effort	6.8_{c}	4.9_{a}	5.3_{ab}	6.5_{c}	5.8_{bc}	5.8_{bc}

Note. Means with different subscripts differ significantly from each other at $p<.05$, Duncan's multiple range test.

TABLE 7B

PERCEPTIONS OF THE ACTOR'S POTENTIAL AS A FUNCTION OF ABILITY AND EFFORT CONDITIONS

	Ability	
	High	Low
High effort	4.97_a	6.20_b
Low effort	5.97_b	5.73_b

Note. Means with different subscripts differ significantly from each other at $p<.05$, Duncan's multiple range test.

(see Table 8 for means). There was also a main effect for Ability, F (1,108) = 6.31, $p<.05$, which was qualified by a marginally significant Ability x Effort interaction, F (1,108) = 3.47, $p<.065$. When effort was low, low ability actors were perceived to be lazier (M = 4.43) than high ability actors (M = 5.33). When the data from co-actors were removed from the analysis, the Ability x Effort interaction, F (1,72) = 5.19, $p<.03$, became more significant.

Although actors did not differ in assessing their own intelligence, co-actors and observers perceived the actor to be less intelligent in the low ability conditions, F (2,108) = 4.55, $p<.05$ for the Ability x Perspective interaction (see Table 9 for means). In addition, observers perceived the actor to be less intelligent in the low effort condition (M = 5.65) than in the high effort condition (M = 6.50; F (2,108) = 4.55, $p<.05$ for the Effort x Perspective interaction). In addition to these effects, an analysis excluding the data from co-actors revealed a significant Ability x Effort interaction, F (1,72) = 4.30, $p<.05$. This interaction showed that ability had no effect upon perceived intelligence when effort was high (Ms = 6.75 versus 6.40), but did have an effect when effort was low (Ms = 7.00 versus 5.75, $p<.05$, for high and low ability conditions, respectively).

TABLE 8

PERCEIVED LAZINESS/INDUSTRIOUSNESS OF THE ACTOR

	Perspective		
	Actor	Observer	Co-actor
High effort	6.65_a	7.15_a	7.50_a
Low effort	6.30_a	4.20_b	4.15_b

	Ability	
	High	Low
High effort	7.17_a	7.03_a
Low effort	5.33_b	4.43_c

Note. Means with different subscripts differ significantly from each other at $p<.05$, Duncan's multiple range test.

TABLE 9A

PERCEPTIONS OF THE ACTOR'S INTELLIGENCE AS A FUNCTION OF ABILITY AND PERSPECTIVE CONDITIONS

	Perspective		
	Actor	Observer	Co-actor
High ability	6.95_{a}	6.80_{ab}	6.85_{a}
Low ability	6.80_{ab}	5.35_{c}	6.20_{b}

Note. Means having different subscripts differ significantly from each other at $p<.05$, Duncan's multiple range test.

TABLE 9B

PERCEPTIONS OF THE ACTOR'S INTELLIGENCE AS A FUNCTION OF EFFORT AND PERSPECTIVE CONDITIONS

	Perspective		
	Actor	Observer	Co-actor
High effort	6.65_{ab}	6.50_{ab}	6.70_{ab}
Low effort	7.10_{a}	5.65_{c}	6.35_{b}

Note. Means having different subscripts differ significantly from each other at $p<.05$, Duncan's multiple range test.

Discussion

The prediction that observers, more than actors, would reward on the basis of effort expended by the actor was well supported by the data. Observers perceived that the actor who exerted less effort during task performance deserved fewer reward tokens than the actor who tried hard, while actors did not self-reward in this manner. In addition, there was a tendency for observers to decrease reward for low effort when ability was also low. The prediction that actors, more than observers, would self-reward more on the basis of ability was not supported, and although the actor's level of performance was not manipulated, there was evidence that actors emphasized their performance level when assigning reward tokens for themselves.

The predictions for actors and observers were based mainly upon the arguments of Jones and Nisbett (1972) that different features of an event are salient for actors and observers, and that actors generally have more and different kinds of information about their inputs than do observers. It was hypothesized that for a task-performance behavior ability would be more salient for actors while effort would be more salient for observers, and that these salient features would govern rewarding behavior. The data in response to questions of perceived success and affect support the hypothesis that ability and effort information are differentially salient for actors and observers. While actors felt more successful only following high ability feedback, observers perceived the high ability and high effort actor to be most successful. While actors reported different affective states only as a function of ability

information, observers believed that both ability and effort feedback would change the actor's affective state. One can tentatively conclude from these data that only ability information is salient for the actor, but that both ability and effort information are salient for the observer. It is not clear from the data, however, why actors were not responsive to the feedback information most salient for them (that is, ability) in their self-rewarding behavior, or why observers were responsive mainly to effort when both ability and effort were salient.

It has been assumed that participants in this research were motivated to be equitable when providing reward tokens for themselves and others. And although the procedure used does not follow the original conception of an equity paradigm in which the dependent measure was the distribution of rewards between two actors, equity theorists have begun to include concepts of justice and deserving within their domain of inquiry (Austin, 1976; Lerner, Miller, & Holmes, 1976). What the data show with regard to equity theory is that perspective differences, as suggested by Adams (1965) and Walster et al. (1973), do have an effect upon how persons weight inputs to arrive at what is perceived to be the appropriate outcome, whether we refer to the rewarding behavior as equity, justice, or deserving. From the point of view of an equity theorist interested in business and labour management, for example, the implications are clear: The parties to the exchange have basic differences regarding the relationship between specific work inputs and wages. The data also provide a conceptual replication of the Leventhal and Michaels (1971) findings that observers reward greater outcomes for greater effort, and provide experimental evidence supporting the suggestive data in Leventhal and Michaels (1969) that

actors and observers differ in their emphasis of effort as a critical input.

With regard to the attribution of achievement literature, the data for observers are only partially consistent with that reported by Weiner and Kukla (1970). Like their subjects, observers in the present experiment responded primarily to effort information, providing fewer rewards for less effort. Unlike their data, the present results do not show that observers reward low ability more than high ability given comparable performance levels. It was suggested in the introduction that the ability effect reported by Weiner and Kukla (1970) was an artifact due to the inference of greater effort in low ability conditions, and that data pertaining to the observer's perceptions of ability and effort were necessary in order to resolve the issue. The results of this research, however, cannot address the question of artifact in Weiner and Kukla's (1970) results. The present observer subjects did not perceive greater effort given low ability compared with high ability information about the actor, nor did they reward the low ability actors with more tokens. What is clear from the present results is that ability is generally not a basis for reward except when both ability and effort are low, and the data show that observers perceive low ability in this instance to be worthy of fewer rewards, not greater rewards.

Weiner and Kukla (1970) also asked subjects in a role-playing simulation study to report their feelings of pride or shame (an affective response) given hypothetical effort and ability information about themselves. The results paralleled their reward/punish data: More pride was experienced following high effort and/or low ability.

These results are interpreted by Weiner and Kukla (1970) as if the subject's responses were made from the point of view of an actor, but they are markedly different from the affect data reported here. The present actor subjects reported feeling more proud following high ability feedback only, while effort information had no effects upon their feelings of pride or shame. On the other hand, observers in the present research did assume that the actor's feelings of pride or shame were influenced by both ability and effort, yet the ability main effect was the reverse of that reported by Weiner and Kukla (1970). Although one can again cite the confounding of ability and effort to explain the negative relationship between ability and affect in Weiner and Kukla's (1970) data, the dramatic reversal shown in the present results cannot be accounted for simply by the absence of any confound.

That actors in the present experiment experienced more positive affect following high ability but not high effort feedback is consistent with the notion that ability information is competence confirming and therefore increases positive affect (Deci, 1975). It is possible that observers faced with the task of responding to items concerning the actor's affective state must empathize in order to do so. In fact, having observers focus upon affect has been used as a manipulation of empathy (Galper, 1976; Regan & Totten, 1976), and Stotland (1969) defines empathy as an observational set in which the other's affective state is also experienced. Furthermore, Jones and Nisbett (1972) propose that an empathizing observer will make attributions more similar to the actor's, which may explain why observers, like actors, perceived the relationship between ability and affect.

The data from co-actors are also consistent with this interpretation.

Jones and Nisbett (1972) propose that co-actors may make attributions similar to those of the actor in part because they can more readily take the role of the actor (that is, empathize). The present data on affect from co-actors show that they believed, like the actor, that ability but not effort influenced how the actor felt. These data suggest that the co-actor, since he empathizes in order to judge the actor's affective response, fails to consider effort information at all, while observers, for whom effort is most salient, are still able to consider effort information even while they empathize.

It should be clear from this discussion that role-playing simulations do not yield results comparable to more experiential procedures. Subjects in Weiner and Kukla (1970) were to respond to a series of outcomes as if they had experienced them directly, and so rather than being able to experience directly a low ability high effort situation, for example, they had to imagine what it would, or more probably, should be like. From this imaginary point of view one can understand why their results were obtained. One should not be punished or ashamed of low ability, since ability does not involve any degree of personal volition--one is born with ability. Effort, on the other hand, is intentionally based, and furthermore, the work ethic prescribes that one should strive one's best, even in the face of situational constraints (low ability, a person's handicap, being one such constraint). For imagining subjects there is a tragic heroism in the person who attempts the impossible in spite of his limited ability, and so tend to see greater value in low ability. The observers given the simulation task are therefore more inclined to confuse what ought to be with what is (see Kelley, 1971, for a discussion of this confusion), and in real experiential settings true

actors cannot necessarily be expected to respond in the same manner, since they know what is and are therefore less likely to confuse it with what ought to be. The present research attests to this analysis. Since only five subjects suspected the reality of the setting or the feedback, the connection between the actor's affective experience and the feedback information was certainly more real than imaginary. The actor certainly did not have to 'simulate himself' in order to respond to the success and affect items on the questionnaire.

The rationale for the prediction that ability, more so than effort, would be salient for actors while effort would be either more salient or equally salient with ability for observers was based upon an analysis of Jones and Nisbett's (1972) discussion of the different features of an event that are salient for actors and observers. It is evident from the perceived success and affect data that while actors attended only to ability information when reporting how they felt, observers attended to both types of information when judging the actor's affective reactions to the ability and effort feedback. In addition to demonstrating that the actor/observer hypothesis and rationale can be used to predict the differential salience of ability and effort information, these data demosntrate the general usefulness of the Jones and Nisbett hypothesis, in that their analysis of actor/observer differences can be usefully extended to dependent measures other than causal attributions.

It is difficult, however, to arrive at a firm conclusion concerning the differential salience of ability and effort for actors and observers. Since both kinds of information were made available to subjects there was no opportunity to examine salience as reflected by information selection or availability. Only the selective use of the information

provided can be referred to in this discussion of salience, and actors and observers given the free opportunity to select the information they require for judging reward level might not select only ability and/or effort. Observers, for example, may never know or care about the actor's ability when determining the actor's deserved reward, or how the actor felt, but used ability information in the present research simply because it was given. It is most likely, however, that effort at least is salient for observers, since only this information was consistently used by them as a determinant of reward. Also, it can be concluded that effort was not salient for actors, since the information was provided and was understood, yet had no effect upon perceived success or experienced affect, or upon self-reward. Whether ability information is in fact salient for observers or actors remains to be shown.

The hypothesis that observers are more likely than actors to infer dispositions based upon performance feedback was also supported. Observers perceived differences in the actor's dispositions of intelligence and laziness as a function of the behavioral feedback, while actors themselves tended to perceive no differences. An analysis of the data for actors only, however, did show that they perceived themselves to be somewhat lazier following low ability feedback ($\underline{M}$ = 6.90 versus 6.05; $\underline{p}<.02$) while observers understandably emphasized the actor's effort when inferring the disposition of laziness. While the connection between ability and the disposition of laziness is obscure at best, the result adds further support to the contention that ability, and not effort, is more salient for actors.

It was predicted that, since effort should be most salient for

observers, they would use effort information as their criterion for reward. The data for observers partially confirm this expectation: The observers perceived effort as salient, and rewarded the actor on the basis of effort expended. However, observers also perceived ability to be a major determinant of the actor's affective response, suggesting that ability is salient too, but observers did not reward on the basis of ability. While the salience of an input is most likely a necessary requirement for that input to figure in rewarding behavior, it does not appear to be the only requirement. The observer data suggest that simply having some attribute (in this case, ability) is not a sufficient basis for reward, while actively using the attribute is. Ability is something one has--it cannot be acquired through volition alone--while persons do not have effort, but most intentionally produce it. The data for observers might well imply that rewards are deemed to be justified only for intentional behaviors. While ability is present in spite of intentions, effort is not, and so observers see deservedness to be a function of effort and not ability.

It was also predicted that ability, because of its salience for actors, would be a major determinant of their self-rewarding behavior. Although the data do indicate that only ability feedback had an effect upon self-perceptions of success and affect, no self-reward differences were found. Also, since the experimental manipulations were powerful enough to alter the actor's perceptions of his own ability and effort expended, though not to the same extent as were the observer's perceptions, actors clearly had the same type of information as did observers. However, none of this information was used as criteria for self-reward, and the only data that provide any information relevant to the self-rewarding

behavior of the actor are the actor's cited reasons for the reward level. These data strongly suggest that performance was the sole criterion for self-reward, and in many of these reasons the actors stated that they gave themselves between 65% and 75% of the available tokens (between 13 and 15) because the experimenter stated that they had performed within ten points of the seventieth percentile. Even though their calculations were sometimes inaccurate, the statement of their self-reward criterion was clear. It seems that rather than weight and evaluate their personal inputs themselves, most actors preferred to self-reward on the basis of an objective performance measure on the task as provided by the experimenter. In a sense, the actors allowed the situation to dictate their self-rewarding behavior, and they did not attempt to self-evaluate their own ability and effort (cf. Kelley, 1976). This interpretation is consistent with the Jones and Nisbett (1972) hypothesis that actors tend to focus attention outward toward the environment. To a certain extent, observers were also responsive to the performance feedback, in that no group of observers rewarded the actor many more than 75% (fifteen) of the reward tokens. For observers, performance level may have provided a reward ceiling, and effort expended may have determined the degree to which the maximum number of tokens were rewarded.

An Alternative Interpretation

Rather than explaining the results of this research in terms of the differential salience of ability and effort for actors and observers, the discussion thus far suggests a potentially more fruitful approach. To the extent that participants in this experiment were required to evaluate someone's inputs of ability and effort in order to judge how

much "his work was worth," it might be useful to discuss the predictions and results in terms of moral evaluations and moral responses, and not in terms of an equity equation and information salience *per se*. For example, it can be argued that deservedness has a strong moral component, and further, that actors cannot be expected to morally evaluate their own behavior within the context of the present experimental setting, thus explaining the no-difference result for actors.

For the purposes of this discussion moral evaluation will be defined as a value judgment which implicitly or explicitly contains some response to the target of the evaluation (Heider, 1958; Kelley, 1971). Such an evaluation has frequently been characterized by scales labelled right-wrong, good-bad, or praise-blame (Kelley, 1971; Pepitone, 1976). The praise-blame scale is a particularly good exemplar of how the judgment and the response are connected. A judgment of deservedness is very similar; the observer evaluates deservedness, and then rewards or punishes to the degree that is deserved.

The moral evaluation response is initiated when a behavior is observed which differs in some significant way from the behavior which is expected in the situation as specified by an ought (Heider, 1958; Kelley, 1971; Ross & DiTecco, 1975). However, an actor who behaves in response to perceived situational forces perceives his behavior to be guided by these oughts, and therefore would not perceive his behavior to be anything other than that which was right or proper given the situation. An actor in this situation would have no basis for morally evaluating his behavior, since his behavior, as he perceives it, is not deviant *vis a vis* the situation in which it occurs. On the other hand, an observer cannot know of the subtleties of the situational forces that

dictate to the actor what his behavior should be, and so would perceive the behavior to deviate from the ought in many cases where the actor perceives no deviance, and the observer would then make a moral evaluation and a moral response to the actor and his behavior.

The expenditure of effort is a behavior which ought to occur in achievement oriented task situations (see Weiner & Peter, 1974, and Kelley's 1971 description of the achievement dimension of moral evaluation) and so effort becomes the focus of a moral evaluation in such settings. Moral evaluations would not be made on the basis of ability, however, since ability is not an attribute controlled by the actor but is a constant entity, and furthermore, there is no ought which governs its presence or absence. Ability is an asset, but not a requirement, and so would not figure in the moral evaluation of achievement like behaviors.

Kelley (1971) asserts that one aspect of moral evaluations is a judgment of personal striving to attain goals, and effort expenditure certainly fits this description. Implied here is an interaction between ability and effort on measures of moral evaluation. To the extent that low ability combined with high effort implies greater striving (since the obstacles to be overcome are greater) than does high ability and high effort, a more favourable evaluation and reward should be provided for the low ability person. In contrast, given low ability, one ought to strive all the more, and so when low effort is evident in this instance, a less favourable evaluation and reward should be expected to be provided compared with high ability low effort behaviors. The present data are fairly consistent with the latter prediction, but not with the former prediction.

For this interpretation, salience of inputs is still an important

factor, since without the salience of effort for observers they would have no basis for making a moral evaluation. Of course, effort may be salient simply because the observers were required to make a moral evaluation and a moral response, and so perceived the effort information to be important for them because of their evaluation task and not because of perspective. A very different design based upon an information selection paradigm would be necessary in order to determine whether the differential salience of ability and effort information in the present experiment is a function of perspective, as contended in the introduction, or a function of the task demands of the observer (that is, causal attribution versus the moral evaluation of the behavior).

Summary

The data from actors suggest that only ability information is salient to them, since only the ability feedback affected how the actors felt about their task performance in terms of success, pride, pleasure, and other indices of affect. These good feelings, however, did not mediate self-reward behavior, contrary to the predictions and the findings in the related literature (e.g., Rosenhan et al., 1974). In self-rewarding, actors tended to rely upon the objective measure of their performance provided by the experimenter rather than having to self-evaluate. For observers, both ability and effort information were perceived to alter the actor's affective reactions to the task feedback, but only effort information influenced their rewarding behavior. Therefore, while both types of information were used by observers at some point, only effort significantly affected the level of reward provided for the actor. Co-actors were similar to observers in their rewarding behavior, but similar to actors when judging the actor's

affective responses to the ability and effort feedback. It may be the case that salience is more a function of the perceiver's task requirements than a function of the perceiver's perspective per se, and that features of a situation can be either perceptually salient (Jones & Nisbett, 1972) or functionally salient, and that both types of salience may contribute to actor-observer differences. An alternative interpretation of the experiment and the data in terms of the moral evaluative nature of deservedness and rewarding behavior was suggested.

References

Adams, J.S. Inequity in social exchange. In L. Berkowitz (ed), Advances in experimental social psychology, Vol. 2. New York: Academic Press, 1965.

Adams, J.S., & Jacobsen, P.R. Effects of wage inequities on work quality. Journal of Applied Social Psychology, 1964, 69, 19-25.

Adams, J.S., & Rosenbaum, W.E. The relationship of worker productivity to cognitive dissonance about wage inequities. Journal of Applied Psychology, 1962, 46, 161-164.

Andrews, I.R. Wage inequity and job performance: An experimental study. Journal of Applied Psychology, 1967, 51, 39-45.

Austin, W. Towards a more general theory of interpersonal justice. Paper presented at the American Psychological Association, September 7, 1976.

Austin, W., & Walster, E. Reactions to confirmations and disconfirmations of expectancies of equity and inequity. Journal of Personality and Social Psychology, 1974, 30, 208-216.

Bandura, A. Social learning theory. New York: General Learning Press, 1971.

Bem, D.J. Self-perception theory. In L. Berkowitz (ed), Advances in experimental social psychology, Vol. 6. New York: Academic Press, 1972.

Deci, E.L. Intrinsic motivation. New York: Plenum Press, 1975.

Festinger, L. A theory of social comparison processes. Human Relations, 1954, 7, 117-140.

Galper, R.E. Turning observers into actors: Differential causal

attributions as a function of 'empathy'. Journal of Research in Personality, 1976, 10, 328-335.

Heider, F. The psychology of interpersonal relations. New York: Wiley, 1958.

Jones, E.E., & Nisbett, R.E. The actor and the observer: Divergent perceptions of the causes of behavior. In E.E. Jones et al. (eds), Attribution: Perceiving the causes of behavior. New York: General Learning Press, 1972.

Kelley, H.H. Moral evaluation. American Psychologist, 1971, 26, 293-300.

Kelley, H.H. Attribution in social interaction. In E.E. Jones et al. (eds), Attribution: Perceiving the causes of behavior. New York: General Learning Press, 1972.

Kelley, H.H. Recent research in causal attribution. Paper presented at the Western Psychological Association, Los Angeles, April 10, 1976.

Lanzetta, J.T., & Hannah, T.E. Reinforcing behavior of naive trainers. Journal of Personality and Social Psychology, 1969, 11, 245-252.

Lerner, M.J., Miller, D.T., & Holmes, J.G. Deserving and the emergence of forms of justice. In L. Berkowitz & E. Walster (eds), Advances in experimental social psychology, Vol. 9: Equity theory: Toward a general theory of social interaction. New York: Academic Press, 1976.

Leventhal, G.S., & Michaels, J.W. Extending the equity model: Perception of inputs and allocation of reward as a function of duration and quantity of performance. Journal of Personality and Social Psychology, 1969, 12, 303-309.

Leventhal, G.S., & Michaels, J.W. Locus of cause and equity motivation

as determinants of reward allocation. Journal of Personality and Social Psychology, 1971, 17, 229-235.

Masters, J.C., & Peskay, J. Effects of race, socioeconomic status, and success or failure upon contingent and noncontingent self-reinforcement in children. Developmental Psychology, 1972, 7, 139-145.

Mischel, W., Coates, B., & Raskoff, A. Effects of success and failure on self-gratification. Journal of Personality and Social Psychology, 1968, 10, 381-390.

Mischel, W., Ebbesen, E.B., & Zeiss, A.R. Selective attention to the self: Situational and dispositional determinants. Journal of Personality and Social Psychology, 1973, 27, 129-142.

Nicholls, J.G. Effort is virtuous, but its better to have ability: Evaluative responses to perceptions of effort and ability. Journal of Research in Personality, 1976, 10, 306-315.

Regan, D., & Totten, J. Empathy and attribution: Turning observers into actors. Journal of Personality and Social Psychology, 1975, 32, 850-856.

Rest, S., Nierenberg, R., Weiner, B., & Heckhausen, H. Further evidence concerning the effects of perceptions of effort and ability on achievement evaluation. Journal of Personality and Social Psychology, 1973, 28, 187-191.

Rosenhan, D.L., Underwood, B., & Moore, B. Affect moderates self-gratification and altruism. Journal of Personality and Social Psychology, 1974, 30, 546-552.

Ross, M., & DiTecco, D. An attributional analysis of moral judgments. Journal of Social Issues, 1975, 31, 91-110.

Rothbart, M. Effects of motivation, equity, and compliance on the use of reward and punishment. Journal of Personality and Social Psychology, 1968, 9, 353-362.

Stotland, E. Exploratory investigations of empathy. In L. Berkowitz (ed), Advances in experimental social psychology, Vol. 4. New York: Academic Press, 1969.

Walster, E., Berscheid, E., & Walster, G.W. New directions in equity research. Journal of Personality and Social Psychology, 1973, 25, 151-175.

Weiner, B. Achievement motivation and attribution theory. Morriston, N.J.: General Learning Press, 1974.

Weiner, B., Frieze, I., Kukla, A., Reed, L., Rest, S., & Rosenhan, R.M. Perceiving the causes of success and failure. Morristown, N.J.: General Learning Press, 1971.

Weiner, B., & Kukla, A. An attributional analysis of achievement motivation. Journal of Personality and Social Psychology, 1970, 15, 1-20.

Weiner, B., & Peter, N. A cognitive-developmental analysis of achievement and moral judgments. Developmental Psychology, 1973, 9, 290-309.

APPENDIX 1

RECORDED EXPERIMENTAL INSTRUCTIONS

This experiment concerns several aspects of the work situation, in that two of you will perform some tasks, and the other will observe the outcome. Specifically, we are interested in how you perceive a working person and the work which he does. Since it is necessary that you do not communicate with each other, you are isolated in these separate booths, and will be required to wear earphones at all times. Also, since these instructions are on tape, we must refer to you by person numbers rather than by name; there is on the table in front of each of you a card which shows your person number assignment.

I will first tell you about the whole procedure, and then instruct you in the specific tasks. Person 1 and Person 2 will each work on two tasks, while Person 3, the observer, fills in a general questionnaire, and then observes the work which has been done. Following these two tasks, all of you will be asked certain questions about one of the workers and his behavior.

The first task is a letter-crossing task, and simply serves as a practice or warm-up for the second task, though it is very useful in another respect as well. We have used this particular task before, and have found it to be an excellent predictor of ability for the second task. For example, if you were to score well on this task, we would predict that your natural ability to score well on the second task would also be high. We have also found that these predictions are accurate for over 75% of the persons tested so far. It is important to note that we cannot predict your actual score on the second task, but

only your natural ability for the second task. Actual scores obtained will depend upon several other factors, as well as natural ability. Person 1 and Person 2 will each work on the first task, then on the second task. Person 3 will be shown each of these tasks, but will not be allowed to actually work on them. Following both tasks, I will have information concerning the performance of one of you, and then each of you will be asked to fill out a short questionnaire.

We would like your cooperation in one additional matter. A member of the Physical Education Department has asked for our help in collecting some basic GSR data which he needs in order to find average levels for university students. We are quite happy to help this professor, since GSR scores are excellent measures of the work or effort expended at a task, and so have relevance to our work here. A GSR is basically a measure of skin conductance, and it is very sensitive to even the smallest changes in muscle tension. We know, for example, that the GSR detects changes in the level of mental concentration, since such concentration always involves some degree of tenseness. In our experiment, we will use these GSR readings as an indicator of how much effort the person expends on the task, or how hard he tries. We will attach two pick-ups to Person 1's wrist, and these detect the changes in skin conductance. A recording device then amplifies the GSR changes, and draws these on a graph. While this is happening you will feel absolutely nothing except for the presence of the pick-ups. Since we only have one recording device, however, we will only ask Person 1 to have his GSR recorded.

I will now describe the details of the first task that Person 1 and Person 2 will do. Person 3, you should also listen to these

instructions. The task consists of crossing out certain letters from a string of randomly ordered letters. Although this is not a task that one usually finds in offices or industry, it does have some useful characteristics which are often a part of real work situations. Like most work, the task involves precision, concentration, and time constraints. It is also a task at which each of you have equal past experiences. The task is to cross out every 'a' and 'o' which occur within four spaces of another 'a' or 'o'. When the signal is given to start you should begin crossing out the appropriate letters from the top line down as far as you can go until time is up. Since you will only have five minutes for this task, you are not expected to complete the whole page. The scoring is fairly complicated, since we must take into account those letters correctly crossed out as well as letters missed or incorrectly crossed off.

I will explain the second task to you after you have done the letter-crossing task, the one which predicts your natural ability for the second task. Right now I will give Person 3 the Work History Report to fill in, and hook up the GSR apparatus to Person 1. I will also answer any questions you might have about the procedure up to this point, and you will then begin the letter-crossing task.

.....Task 1 in progress.....

I will now describe to you the details of the second task, and Person 3 should interrupt his work on his questionnaire to hear about this task. While I am explaining this task, baseline GSR data is being recorded for Person 1. For this task you will get an identical sheet of random letters like the one used in the first task, but this time Person 1 and Person 2 must find as many words as they can which are

hidden in the rows of random letters. These words must be ones used in spoken or written English, and may include proper nouns (for example, a person's name), or slang words. The basic method for scoring will be the same as that used in the letter-crossing task, but it cannot be completed now. Because many words and their usages might be open to dispute, the task results will be scored by a panel of judges at the end of the term. All I can give you at this time is a preliminary score, though it will most likely be within 10 or 15 points of your final score. We feel that this method of scoring will be fair to all of you. This of course means that I will not be able to tell you exactly how well you did on this second task until all the results have been scored by the judges. I will now bring you the word-finding task and answer any questions you might have about it. Person 3, I will show you this task, and how it is done, but you are not to attempt to do it. Instead, while the others are working on it, you will have time to complete the Work History Report. Again, you will have five minutes to work on this task.

.....Task 2 in progress.....

APPENDIX 2A

A portion of the task sheet with a worked example of how the letter-crossing task (Task 1) was to be performed.

Examples: raeicl.....

saicen.....

nieøør.....

typøxøezøcevmaethiqøønciet1ze.....

---

møcøewcazrsraverrwecvsrnimeriønøenmeevzszaueeeevøvøcwvesdeal

øeønneaceevsuøeøecøenrivierersnzeemrøerøiøwerømørøzreamezilbl

APPENDIX 2B

A portion of the task sheet with a worked example of how the word-finding task (Task 2) was to be performed.

Examples: raecil.....

saicen.....

nieaor.....

---

macaewcazrs raverrwecvs rn imeri anaeanmeevzszaueeeevavocwvesdeal

aeanneaceevsuaeaecaenrivierersnzeemraeroiawe romarazreamezilbl

APPENDIX 3A

QUESTIONNAIRE INSTRUCTIONS

The following questionnaire concerns your perceptions of one of the workers and of the work situation as it relates to the second task, the word-finding task. Please read each question carefully before answering. Most questions are answered by circling one of the scaled numbers which appear below each question. Please do not change your answers. There are no right or wrong answers; the answers you give should only reflect your own judgment of the person or situation referred to. None of the other participants will ever see the answers you give. Your answers will remain completely anonymous. Please feel free to add your own comments to any of the questions on the following pages if you feel that you need to clarify your answers.

Thank you.

1. You have already been asked to set aside a number of reward tokens for _____, the number of tokens you think _____ deserve(s) for his task performance. Please record in the space below the number of tokens which you think _____ deserve(s) and then explain in a sentence or two the basis for your decision.

   NUMBER OF TOKENS: _____

   REASON FOR THIS DECISION:

2. Compared with most persons, how well do you think _____ performed on the word-finding task?

1	2	3	4	5	6	7	8	9
very poorly				about average				very well

3. While working on the word-finding task, _____ change in GSR level was

1	2	3	4	5	6	7	8	9
very small								very large

4. For the purposes of this experiment, a person's change in GSR is a good measure of _____.

5. My impression of the word-finding task is that it was

1	2	3	4	5	6	7	8	9
very easy								very hard

6. To what extent do you feel that good luck or bad luck was a factor influencing _____ performance on the word-finding task?

1	2	3	4	5	6	7	8	9
not a factor								very much a factor

7. How much ability _____ have for the word-finding task?

1	2	3	4	5	6	7	8	9
very little								very much

8. How much effort did _____ expend during the word-finding task? (i.e., how hard did _____ try?)

1	2	3	4	5	6	7	8	9
very little								very much

9. Considering both the letter-crossing task and the word-finding task, how successful do you think _____ with respect to the task requirements of this experiment?

1	2	3	4	5	6	7	8	9
not very successful								very successful

10. Compared with this task, how well do you think _____ would perform on a similar task? (e.g., proof-reading an essay).

1	2	3	4	5	6	7	8	9
much the same								much diff rently

11. How much potential or chance for improvement would you say _____ has with respect to the word-finding task used in this study?

1	2	3	4	5	6	7	8	9
very little								very much

12. Please describe, as best you can, how _____ felt after _____ received the feedback from both experimental tasks.

a)	happy	1	2	3	4	5	6	7	say
b)	pleased	1	2	3	4	5	6	7	displeased
c)	proud	1	2	3	4	5	6	7	ashamed
d)	good	1	2	3	4	5	6	7	bad
e)	satis-fied	1	2	3	4	5	6	7	dissatisfied

13. How would you characterize _____ attitude towards the task?

1	2	3	4	5	6	7	8	9
very lazy								very industrious

14. In general, I would characterize _____ as

1	2	3	4	5	6	7	8	9
not very intelligent								very intelligent

15. How much past experience would you say that _____ has had with tasks similar to the ones used in this study?

1	2	3	4	5	6	7	8	9
very little								very much

(The following question appeared only on the questionnaires filled out by co-actors and observers.)

16. How much do you think you would enjoy working with Person 1 on some other task or project?

1	2	3	4	5	6	7	8	9
not at all								very much

APPENDIX 3B

WORK HISTORY REPORT

We are interested in certain aspects of your personal work history. You do not have to identify yourself nor the places where you worked. We only want a very general description of the type of work you performed and the size and type of company you worked for. Following these details about each of your past jobs, please answer several scaled questions describing your experiences at that particular job. Please start with your most recent employment.

1. Most recent employment.

Type of work done: labour _____

clerical _____

management _____

other _____
(please specify)

Size and type of company worked for: _____

My impressions of the work situation: (Please circle one number.)

1.	fair	1	2	3	4	5	6	7	unfair
2.	clean	1	2	3	4	5	6	7	dirty
3.	pleasant	1	2	3	4	5	6	7	unpleasant
4.	worthwhile	1	2	3	4	5	6	7	worthless
5.	good	1	2	3	4	5	6	7	bad
6.	interesting	1	2	3	4	5	6	7	dull

Other impressions or feelings: _____

(Observer subjects completed three pages identical to this one, describing on them their three most recent jobs.)

APPENDIX 4A

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S ABILITY

Source	df	MS	F	p<
Perspective (P)	2	4.56	1.94	ns
Ability (A)	1	143.01	60.93	.001
Effort (E)	1	.01	.00	ns
P x A	2	9.06	3.86	.03
P x E	2	2.06	.88	ns
A x E	1	.07	.03	ns
P x A x E	2	1.82	.78	ns
Error	108	2.35		

APPENDIX 4B

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S EFFORT EXPENDED

Source	df	MS	F	p<
Perspective (P)	2	11.63	10.11	.001
Ability (A)	1	1.41	1.23	ns
Effort (E)	1	371.01	322.62	.001
P x A	2	.43	.38	ns
P x E	2	42.63	37.07	.001
A x E	1	.41	.36	ns
P x A x E	2	.23	.20	ns
Error	108	1.15		

APPENDIX 4C

ANALYSIS OF VARIANCE SUMMARY TABLE FOR TOKENS PROVIDED FOR THE ACTOR

Source	df	MS	F	p<
Perspective (P)	2	16.36	1.20	ns
Ability (A)	1	42.01	3.07	.09
Effort (E)	1	559.01	40.84	.001
P x A	2	14.11	1.03	ns
P x E	2	63.76	4.66	.02
A x E	1	52.01	3.80	.054
P x A x E	2	5.61	.41	ns
Error	108	13.69		

APPENDIX 4D

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S SUCCESS

Source	df	MS	F	p<
Perspective (P)	2	1.63	.95	ns
Ability (A)	1	57.41	33.18	.001
Effort (E)	1	15.41	8.91	.01
P x A	2	.03	.02	ns
P x E	2	2.43	1.41	ns
A x E	1	.21	.12	ns
P x A x E	2	.53	.31	ns
Error	108	1.73		

APPENDIX 4E

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S AFFECTIVE RESPONSE TO THE FEEDBACK (THE DATA ARE THE SUM OF FIVE ITEMS)

Including Co-actors					Excluding Co-actors				
Source	df	MS	F	p<	Source	df	MS	F	p<
Perspective (P)	2	59.47	2.56	ns	Perspective (P)	1	13.61	.60	ns
Ability (A)	1	1442.13	62.00	.001	Ability (A)	1	1256.11	55.35	.001
Effort (E)	1	177.63	7.64	.01	Effort (E)	1	159.61	7.03	.01
P x A	2	32.26	1.39	ns	P x A	1	5.51	.24	ns
P x E	2	49.76	2.14	ns	P x E	1	90.31	3.98	.05
A x E	1	8.53	.37	ns	A x E	1	1.51	.07	ns
P x A x E	2	29.91	1.72	ns	P x A x E	1	40.61	1.79	ns
Error	108	23.26			Error	72	22.69		

APPENDIX 4F

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S FELT SATISFACTION WITH THE FEEDBACK

Source	df	MS	F	p<
Perspective (P)	2	2.71	1.40	ns
Ability (A)	1	67.50	34.91	.001
Effort (E)	1	2.70	1.40	ns
P x A	2	2.77	1.44	ns
P x E	2	8.12	4.21	.02
A x E	1	.30	.16	ns
P x A x E	2	2.72	1.41	ns
Error	108	1.93		

APPENDIX 4G

ANALYSIS OF VARIANCE SUMMARY TABLE FOR RATINGS OF THE ENJOYABILITY OF WORKING WITH THE ACTOR (DATA FROM OBSERVERS AND CO-ACTORS ONLY)

Both Perspective Conditions					Co-actor Perspective Only				
Source	df	MS	F	p<	Source	df	MS	F	p<
Perspective (P)	1	2.45	1.80	ns	Ability (A)	1	3.02	1.62	ns
Ability (A)	1	20.00	14.54	.001	Effort (E)	1	30.62	16.43	.001
Effort (E)	1	48.05	34.95	.001	A x E	1	.03	.01	ns
P x A	1	4.05	2.94	ns	Error	36	1.86		
P x E	1	.80	.58	ns					
A x E	1	.45	.33	ns					
P x A x E	1	.20	.15	ns					
Error	72	1.37							

APPENDIX 4H

ANALYSIS OF VARIANCE SUMMARY TABLE FOR JUDGMENTS OF THE ACTOR'S EXPECTED PERFORMANCE ON A SIMILAR TASK

Source	df	MS	F	p<
Perspective (P)	2	1.66	.47	ns
Ability (A)	1	20.83	5.93	.02
Effort (E)	1	24.30	6.92	.01
P x A	2	7.31	2.08	ns
P x E	2	3.67	1.05	ns
A x E	1	12.03	3.43	.07
P x A x E	2	4.26	1.21	ns
Error	108	3.51		

APPENDIX 41

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S POTENTIAL OR CHANCE FOR IMPROVEMENT

Source	df	MS	F	p<
Perspective (P)	2	.66	.19	ns
Ability (A)	1	7.50	2.15	ns
Effort (E)	1	2.13	.61	ns
P x A	2	4.37	1.25	ns
P x E	2	1.11	.32	ns
A x E	1	16.13	4.62	.04
P x A x E	2	11.56	3.31	.04
Error	108	3.49		

APPENDIX 4J

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S LAZINESS/INDUSTRIOUSNESS

Source	df	MS	F	p<
Perspective (P)	2	7.23	5.69	.01
Ability (A)	1	8.01	6.31	.02
Effort (E)	1	147.41	116.13	.001
P x A	2	1.23	.97	ns
P x E	2	26.53	20.90	.001
A x E	1	4.41	3.47	.065
P x A x E	2	2.03	1.60	ns
Error	108	1.27		

APPENDIX 4K

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PERCEPTIONS OF THE ACTOR'S INTELLIGENCE

Including all Perspective Conditions

Source	df	MS	F	p<
Perspective (P)	2	6.43	6.77	.01
Ability (A)	1	16.87	17.76	.001
Effort (E)	1	1.87	1.98	ns
P x A	2	4.30	4.53	.02
P x E	2	4.30	4.53	.02
A x E	1	1.87	1.98	ns
P x A x E	2	1.60	1.69	ns
Error	108	.95		

Excluding Data from Co-actors

Source	df	MS	F	p<
Perspective (P)	1	12.80	13.59	.001
Ability (A)	1	12.80	13.59	.001
Effort (E)	1	.80	.85	ns
P x A	1	8.45	8.99	.01
P x E	1	8.45	8.99	.01
A x E	1	4.05	4.31	.05
P x A x E	1	.80	.85	ns
Error	72	.94		